

REMARKS

At the outset, Applicants wish to thank the Examiner for the courtesies extended during the June 9 Interview, where pending claims 1-12 and possible amendments to those claims were discussed. By this Amendment, the claims are being amended to even more clearly point out and claim Applicants' invention. No new matter has been introduced by this Amendment.

Claim Rejections

Rejection Under 35 U.S.C. § 103

A. Response to Rejection of Claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Ricci et al. in view of Chaung.

In response to the rejection of claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over International Patent Application No. WO 96/14533 of Ricci et al. ("Ricci"), in view of U.S. Patent No. 6,207,089 of Chaung ("Chaung"), Applicants respectfully submit that a *prima facie* case of obviousness has not been made out by the Examiner and respectfully traverse the rejection.

With respect to the rejection under § 103, in order to establish a *prima facie* case of obviousness, the Examiner must establish all three of the following essential criteria: (1) there must be a motivation in the cited prior art to modify the references as suggested by the Examiner; (2) the cited references must teach or suggest each of the claimed elements; and (3) the cited references must provide a basis for a reasonable expectation for success. The motivation to modify and the reasonable expectation for success must come from the cited prior art and not the Applicant's specification. Further, it is not enough that a reference can be modified absent a suggestion in the cited prior art to undertake such modification.

As acknowledged by the Examiner, Ricci does not teach all the steps of the present invention, in that it does not disclose a heating step after the overmolding step. Nevertheless, the Examiner contends that Chaung remedies the deficiency of Ricci by providing the missing heating step.

First, as generally discussed with the Examiner at the June 9 interview, Applicants have

amended claim 1 to recite in step c) cooling the plastic material to a temperature below its softening point; and following step c), [step d)], applying heat to the metal surface, to re-soften or re-melt the plastic material in contact with the metal surface to enhance adhesion between the plastic material and the metal surface. In contrast, in the process of Chaung, the softened state of the plastic material is maintained during overmoulding, since “softened plastic is introduced from an injection machine to the mold cavity” (col. 5, lines 46-48). The plastic therefore is not softened after the overmoulding step. Further, Chaung does not specifically teach a heating step after the molding step, as argued by the Examiner. Column 9, lines 23-33 of Chaung discusses applying heat to the metal perform before and during the step of injection moulding, as shown in Figure 9. The mold is heated before so that the superplastic alloy is deformed, and then while the injection cavity is filled. The molten or softened plastic flows better than the solid plastic so the cavity is filled more easily. The very next paragraph of Chaung discusses the operation shown in Figure 10, where the mold base is moved apart from the first half mold block, and then as shown in Figure 11, where the second half mold block is also moved apart (col. 9, lines 34-36). Therefore, not only is a heating step after moulding not shown, no step is described after the injection moulding and before the removal of the superplastic alloy foil from the mold.

Second, the Examiner has suggested modifying Ricci as described by Chaung. However, Ricci describes as background such a coupling method where “the metallic pipe end is primed followed by overmoulding wherein the metallic pipe end is placed inside an injection mould in order to complete the connection (page 2, lines 20-23).” However, Ricci goes on to describe the problems associated with such a coupling arrangement as being “prone to leakage and can fail when the joint is under torsion (page 2, lines 23-25).” Ricci thus teaches away from the disclosure of Chaung. Therefore, Ricci and Chaung are not properly combined, since Ricci teaches away from their combination (MPEP 2161). Finally, with regard to claims 2-4 and 6-9, the Examiner has stated that it would have been obvious to apply pressure to the metal surface since it is well-known in the molding art to apply pressure during a heating step to heat a perform more quickly. However, in the present invention, the application of pressure is not meant to heat the perform more quickly, but to improve the adhesion between the plastic material and the metal surface (page 4, lines 24-26).

Thus, there is no motivation in the cited prior art to modify the references as suggested by

the Examiner, and the cited references do not teach or suggest each of the claimed elements. Further, since Ricci actually teaches away from Chaung, there is no reasonable expectation for success. Thus, since none of the essential criteria for a *prima facie* case of obviousness have been established, Applicants respectfully request that the Examiner reconsider and withdraw the § 103(a) rejection of claims 1-12, and allow those claims.

B. Unexpected Results

Further, even if a *prima facie* case of obviousness could have been shown based on Ricci and Chaung, Applicants have overcome any such *prima facie* case of obviousness by setting forth in the specification the advantageous enhanced peel strength resulting from the process of the invention, as summarized on page 6, lines 6-26. The Examiner did not address the issue of unexpected results in the previous office action, although during the June 9 interview, the Examiner indicated that, while Example 1 of the specification illustrated the addition of pressure, claim 1 did not recite that limitation; and suggested that the dependent claims reciting the application of pressure be re-written as independent claims. Applicants have re-written claim 4 as an independent claim as suggested. Reconsideration of the unexpected results contained on page 6, lines 6-26 is requested. Applicants respectfully submit that these unexpected and improved results provide yet further reason for withdrawal of the obviousness rejection.

Applicants respectfully request that a timely Notice of Allowance be issued in this case. Should the Examiner have questions or comments regarding this application or this amendment, Applicants' attorney would welcome the opportunity to discuss the case with the Examiner.

The Commissioner is hereby authorized to charge U.S. PTO Deposit Account 08-2336 in the amount of any fee required for consideration of this amendment.

This is intended to be a complete response to the Office Action mailed May 19, 2004.

Respectfully submitted,

GIAN LUIGI RIGOSI ET AL.

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(Date)

By:

William R. Reid

William R. Reid
Registration No. 47,894
Attorney for Applicants

Basell USA Inc.
912 Appleton Road
Elkton, MD 21921
Attorney's Telephone No.: 410-996-1783
Attorney's Fax No.: 410-996-1560

I hereby certify that this correspondence is being deposited with sufficient postage thereon with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on August 3, 2004.

Robert A. Dutta
August 3, 2004
Date of Signature